

CLAIMS

1. A flexible fire protection plate having a plastic matrix and an inorganic filler, comprising a plate made of pliable organic binder in which a coarse-grained inorganic filler is embedded.
2. The fire protection plate according to Claim 1, wherein as the pliable binder, it contains a pliable polyurethane polymer, a vulcanized caoutchouc compound, a dispersion acrylate and/or a polyvinyl acetate.
3. The fire protection plate according to Claim 2, wherein the pliable polyurethane polymer is either a polyurethane foam made of a polyisocyanate, of a polyol and water, or else a polyurethane foam made with a foaming agent on the basis of a liquefied gas.
4. The fire protection plate according to Claim 1, wherein it contains 30% to 80% by weight, preferably 65% to 75%, of the pliable binder and 70% to 20% by weight, preferably 35% to 25% by weight, of the coarse-grained inorganic filler.
5. The fire protection plate according to Claim 1, wherein as the coarse-grained inorganic filler, it contains grains having a particle size of 1 mm to 25 mm, preferably 3 mm to 15 mm.

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6. The fire protection plate according to Claim 5, wherein as the coarse-grained inorganic filler, it contains grains made of a foamed mineral material.
7. The fire protection plate according to Claim 1, wherein as the coarse-grained inorganic filler, it contains grains made of pumice, porous concrete, water-glass foam, geopolymers, sepiolite, fly ash, gypsum, foamed expanded clay, perlite and/or vermiculite, or else in the form of hollow beads made of silicate material or glass.
8. The fire protection plate according to Claim 1, wherein the pliable organic binder contains an additive to increase the dimensional stability of the crust that is formed in case of fire.
9. The fire protection plate according to Claim 8, wherein as the additive, it contains an additive mixture containing at least one acidifier, at least one compound that yields carbon and at least one particulate metal.
10. The fire protection plate according to Claim 9, wherein the pliable organic binder contains 10% to 60% by weight, preferably 25% to 40% by weight, of the additive mixture.
11. The fire protection plate according to Claim 10, wherein the additive mixture contains 10% to 90% by weight, preferably 40% to 70% by weight, of the acidifier,

5% to 45% by weight, preferably 15% to 30% by weight, of the compound that yields carbon and 2% to 30% by weight, preferably 5% to 15% by weight, of the particulate metal.

12. The fire protection plate according to Claim 11, wherein as the acidifier, the additive mixture contains a salt or an ester of an inorganic, non-volatile acid selected from among sulfuric acid, phosphoric acid or boric acid.
13. The fire protection plate according to Claim 12, wherein as the acidifier, the additive mixture contains ammonium phosphate, ammonium polyphosphate, a diamine phosphate, a phosphoric acid ester with monovalent or polyvalent alcohols, especially polyols, such as pentaerythritol, specifically pentaerythritol phosphate, trichloroethyl phosphate, tris(2-chloroisopropyl) phosphate, triphenyl phosphate, tris(2-chloroethyl) phosphate, a phosphoric acid partial ester or phosphoric acid hetero-ester with monovalent and/or polyvalent low-molecular-weight alcohols, a melamine phosphate, especially monomelamine orthophosphate, dimelamine orthophosphate, dimelamine pyrophosphate, melamine polyphosphate and/or a boric acid salt, especially melamine borate.
14. The fire protection plate according to Claim 9, wherein as the carbon-yielding compound, the additive mixture contains a polyhydroxy compound and/or a thermoplastic or thermoset plastic polymeric resin binder.

15. The fire protection plate according to Claim 14, wherein as the carbon-yielding compound, the additive mixture contains a carbohydrate like sugar or starch, pentaerythritol, dipentaerythritol, a phenol resin, a urea resin, a polyurethane, polyvinyl chloride, poly(meth)acrylate, polyvinyl acetate, polyvinyl alcohol, a silicon resin and/or a caoutchouc.
16. The fire protection plate according to Claim 9, wherein as the particulate metal, it contains a metal selected from the group comprising aluminum, magnesium, iron and zinc.
17. The fire protection plate according to Claim 16, wherein the additive mixture contains the particulate metal in the form of a powder, platelets, scales, fibers, threads and/or whiskers.
18. The fire protection plate according to Claim 17, wherein the particulate metal in the form of powder, platelets or scales has a particle size $\leq 50 \mu\text{m}$, preferably $0.5 \mu\text{m}$ to $10 \mu\text{m}$.
19. The fire protection plate according to Claim 17, wherein the fibers, threads and/or whiskers of the particulate metal have a thickness of $0.5 \mu\text{m}$ to $10 \mu\text{m}$ and a length of $10 \mu\text{m}$ to $50 \mu\text{m}$.

20. The fire protection plate according to Claim 1, wherein the pliable organic binder additionally contains at least one inorganic filler selected from among metal oxides, especially iron oxide, titanium dioxide, silicon dioxide and aluminum oxide, barite, borates, especially zinc borate, carbonates, preferably chalk, silicates, preferably alkali silicates, talcum, mica, wollastonite, kaolin and/or glass powder.

21. The fire protection plate according to Claim 1, wherein the pliable organic binder additionally contains one or more flame retardants.

22. The fire protection plate according to Claim 21, wherein as an additional flame retardant, the pliable organic binder additionally contains a flame retardant containing halogen, an ammonium phosphate, a metal hydroxide, especially aluminum hydroxide or magnesium hydroxide, a metal oxide, especially antimony oxide, red phosphorus and/or a phosphorus compound, especially a halogenated phosphoric acid ester such as trichloroethyl phosphate, tris(2-chloroisopropyl) phosphate, triphenyl phosphate or tris(2-chloroethyl) phosphate.